MODEL#: IN-DO4MF

H.264 4-Megapixel IP D/N Vandal Proof PoE Rugged Dome Camera

HARDWARE USER MANUAL

01/10/2011

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0. Precautions

Read these instructions

You should read all the safety and operating instructions before using this product.

Heed all warnings

You must adhere to all the warnings on the product and in the instruction manual. Failure to follow the safety instruction given may directly endanger people, cause damage to the system or to other equipment.

Servicing

Do not attempt to service this video device yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Trademarks

All names used in this manual are probably registered trademarks of respective companies.

Liability

Every reasonable care has been taken during the writing of this manual. Please inform your local office if you find any inaccuracies or omissions. We cannot be held responsible for any typographical or technical errors and reserve the right to make changes to the product and manuals without prior notice.

FCC/CE Regulation

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the users will be required to correct the interference at their own expense.

1. Introduction

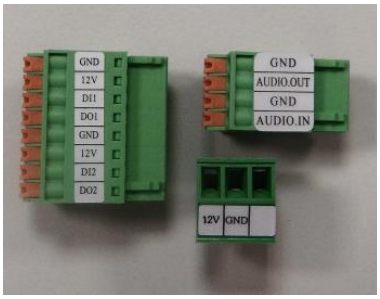
Package Contents

H.264 4 Megapixel IP D/N Vandal Proof PoE Rugged Dome Camera

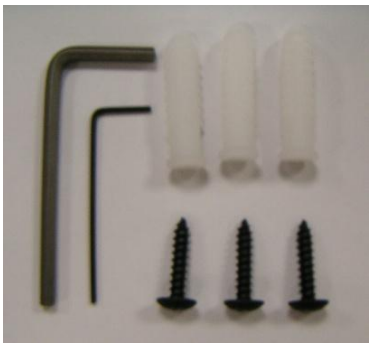
Power Adaptor (Optional)

Product CD

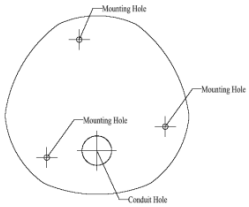
Terminal Blocks for Power DI/O and Audio



Accessories



Drill Template



Drill template(scale 1:1)

Features and Benefits

This is a cutting edge network video surveillance camera. It can capture, compress and transmit real time video in excellent quality (8 FPS 4Megapixel, 2032 x 1920). This camera is your best choice to build an intelligent IP surveillance system.

Adaptive Profile

With the innovative embedded Image Signal Processor (ISP), this camera responds to changing lighting condition with customized algorithm. This allows for clear image with very little noise at night.

H.264/MPEG-4/MJPEG Triple Codec Dual Streaming

This device supports 3 compression formats, H.264, MPEG-4 and MJPEG. It brings superior image quality at 8 frames per second up to resolution of 2032 x 1920 pixels, and offers up to 15 frames per second in Full HD 1080p (!920 x 1080). In 720p (1280 x 720) and VGA resolution (640 x 480) the device reaches 30 frames per second.

Rugged Vandal-Proof Construction withstands all kinds of abuse.

Special engineer polymer clear dome shell protects against brute force impact. It is extremely durable against any tampering intruder. IP66 construction isolates electronics against the elements. Rain, sleet or snow, nothing goes through. Temperature control ensures cold-start capability for use in the worst of weathers.

P Iris Control

With optional P Iris Lens, this camera automatically adjusts incoming light levels to achieve the best video performance. Wildly fluctuating outdoor lighting condition is no longer an issue with your video quality.

Powerful Bundled Surveillance Software

To extend the capabilities of the IP Box Camera series, a powerful surveillance program is included in the package for free. Users can easily use an existing PC as a digital video recorder. Scheduled recording and manual recording keep every important video recorded in the local hard disk. Reliable and accurate motion detection with instant warning enables immediate response in every condition. Quick and simple search and playback function lets you easily find the images and video you want.

Software Development Kit Support

This IP Box Camera can be integrated or controlled by applications from third party software developers. Software developers can save considerable efforts by using our Streaming Library or ActiveX control.

Safety Instructions

Don’t use the power supply with other voltages

This device is likely to be damaged or damage other equipments / personnel, if you use a power supply with different voltage than the one included with this device. All warranty of this product will be voided in the situations above.

Don’t open the housing of the product

Cleaning

Disconnect this video product from the power supply before cleaning.

Attachments

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

Water and Moisture

Do not use this video product near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

Don’t use accessories not recommended by the manufacturer

Only install this device and the power supply in a dry place protected from weather

Servicing

Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring service

Disconnect this video product from the power supply immediately and refer servicing to

qualified service personnel under the following conditions.

1) When the power-supply cord or plug is damaged
2) If liquid has been spilled, or objects have fallen into the video product.
3) If the video product has been directly exposed to rain or water.
4) If the video product does not operate normally by following the operating Instructions in this manual. Adjust only those controls that are covered by the instruction manual, as an improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the video product to its normal operation.

Safety Check

Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine if the video product is in proper operating condition.

Physical description

1 Power Button
2 Ethernet Port
3 MicroSD / Micro SDHC Card Slot
4 Reset Button
5 Digital Input / Output
6 DC 12V Power Input
7 Audio Input / Output

1) Power Button

Press the Power Button and then camera will reboot automatically.

2) Ethernet Port

The IP device connects to the Ethernet via a standard RJ45 connector. Supporting NWAY, this IP device can auto detect the speed of local network segment (10Base-T/100Base-TX Ethernet).

3) Micro SD / Micro SDHC Card Slot*

Insert your Micro SD card here for local recording on camera

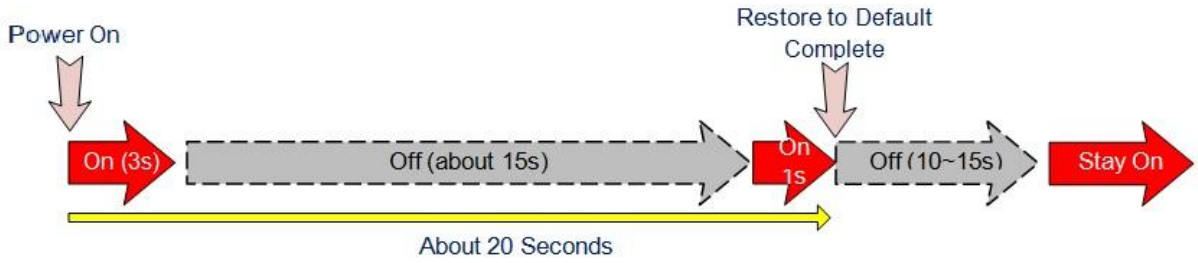
4) Reset Button

Step 1: Switch off IP device by disconnecting the power cable

Step 2: Press and continue to hold the Reset Button (with a sharp tipped object, like a pen.)

Step 3: ***Reconnect the power cable while continuing to hold the reset button.*** The red Power LED light will flash on for 3 second first, turn off for about 15 seconds, flash on for another second and turn off again. By this time the reset to default operation is already completed. ***This will take around 20 seconds from power up.*** You may then release the

reset button. This length of time fluctuates slightly with the environment. The Power LED light will come back on and stay on after a few more seconds. The unit will start up with factory default settings automatically.



5) Digital Input / Output

Used in applications like motion detection, event triggering, time lapse recording, alarm notifications, etc., the I/O terminal connector provides the interface to:

•**2 transistor output** - For connecting external devices such as relays and LEDs. Connected devices can be activated by Output buttons on the Live View page or through video management software. Connect Pin 2 with 4 or 6 with 8.

•**2 Digital Input** - An alarm input for connecting devices that can toggle between an open and closed circuit, for example: PIRs, door/window contacts, glass break detectors, etc. The device will detect the change in digital input and transmit the signal to video surveillance servers.

Pin 1	GND	Ground. Connect with Pin 3 for DI control loop.	
Pin 2	12V	Provides power to external devices with a maximum current of 100mA.	Voltage: 12V DC, Max: 1.2W
Pin 3	Digital Input	Connect to GND to activate, or leave floating (or unconnected) to deactivate.	Must not be exposed to voltages greater than 30V DC.
Pin 4	Transistor Output	Connect to Pin 2 through external devices for DO loop. If used with an external relay, a diode must be connected in parallel with the load for protection against transient voltages.	Max load = <100mA Max voltage = 24V DC (to the transistor)

(Pin 5 – 8 repeats Pin 1-4 for another set of DIO)

Connect input/output devices to the camera as follows:

1. Attach the cables for the device securely to the supplied green connector block.
2. Once cables are connected, push connector block into the terminal connector on camera.

6) DC 12V Power Input

Connect DC power source to the terminal block. The wire with white dashed lines is the live wire, which should connect to the 12V pin.

PIN	NAME	DESCRIPTION
1	N	AC Power Input
2	L	
3	GND	E-Ground of power

7) Audio Input / Output

The IP device supports audio input and output via terminal block

Product Specification

• Device

Device Type	Fixed Dome Camera
Image Sensor	BSI Progressive Scan CMOS
Sensor Size	1/3.2 " (4.5 x 3.4 mm)
Horizontal Resolution	1561 TVL
Day / Night	Yes
Minimum Illumination	Color: 0.1 lux at F2.0 (30 IRE, 2400°K); B/W: 0.05 lux at F2.0 (30 IRE, 2400°K)
Color to B/W switch	ISP based switch, configurable
Mechanical IR Cut Filter	Yes
IR Sensitivity Range	700 - 1100 nm
IR LED	No
Electronic Shutter	1/25 - 1/2000 sec (50Hz); 1/15 - 1/2000 sec (60Hz) (manual mode) 1 - 1/2000 sec (auto mode)

• Lens

Focal Length	Fixed Focal, f2.8 mm / F2.0
Iris	Fixed Iris
Focus	Manual Focus
Mount Type	CS mount (interchangeable lens)
Lens Option	Compatible lenses are available
Horizontal Viewing Angle	82.59

• Video

Compression	H.264, MPEG-4 SP, MJPEG
Maximum Frame Rate vs. Resolution (H.264, MJPEG)	8 fps at 2032 X 1920; 15 fps at 1920 X 1080 (HD 1080p); 30 fps at 1280 x 720 (HD 720p); 30 fps at 640 x 480 (VGA)
Maximum Frame Ratevs. Resolution (MPEG-4 SP)	5 fps at 2032 X 1920; 10 fps at 1920 X 1080 (HD 1080p); 24 fps at 1280 x 720 (HD 720p); 30 fps at 640 x 480 (VGA)
4 Cropped VGA Mode (All Compressions)	15 fps at 640 x 480 (VGA)
Multi-Streaming	Simultaneous dual streams based on two configurations in single view mode; Multiple streams based on single configuration in 4 cropped VGA mode
Bit Rate	28 Kbps - 6 Mbps (per stream)
Bit Rate Mode	Constant, Variable
S/N Ratio	More than 58 dB
Image Enhancement	White balance: automatic, hold and manual; Brightness; Contrast; Automatic gain control; Digital noise reduction; Flickerless
Privacy Mask	4 configurable regions
Text Overlay	User defined text on video
Image Orientation	Image flip and mirror

• Audio

Audio Compression	8 kHz, Mono, PCM, 16 bit encoding
Audio-In	Terminal Block
Audio-Out	Terminal Block

• Network

Protocol & Service	TCP, UDP, HTTP, HTTPS, DHCP, PPPoE, RTP, RTSP, IPv6, DNS, DDNS, NTP, ICMP, ARP, IGMP, SMTP, FTP, UPnP, SNMP, Bonjour
Ethernet Port	1, Ethernet (10/100 Base-T), RJ-45 connector
Security	IP address filtering; HTTPS encryption; Password protected user levels

• Alarm

Alarm Trigger	Video motion detection 3 regions in single view mode, 1 region each in 4 cropped VGA mode; External device through digital input
Alarm Response	Notify control center; Change camera settings; Command other devices; E-mail notification with snapshots; Save video or snapshot to local storage; Upload video, snapshot to FTP server; Activate external device through digital output

• Interface

Digital Input	2, terminal block
Digital Output	2, terminal block
Local Storage	MicroSD/SDHC memory card slot (card not included)

• General

Power Source / Consumption	PoE Class 3 (IEEE802.3af) / 10.08W DC 12V / 8.28W
Weight	1415g (3.12 lb)
Dimensions (Ø x H)	151.69 mm x 114.9 mm (5.97" x 4.52")
Environmental Casing	Weatherproof (IP66 rated); Transparent vandal proof dome cover, up to 659.23 kgF (1453.35 lbF)
Mount Type	Surface, Pendant, Wall, Corner, Pole, Flush
Operating Temperature	-20℃ ~ 50℃ (-4 ℉ ~ 122 ℉)
Operating Humidity	10% ~ 85% RH
Approvals	Camera: CE, FCC; Adapter: CE, TUV-GS, UL, RCM, CCC

• Integration

SV Integration	Software Development Kit (SDK) available
Firmware Access	Browser Microsoft Internet Explorer 6.0 or newer

2. Installation Procedure

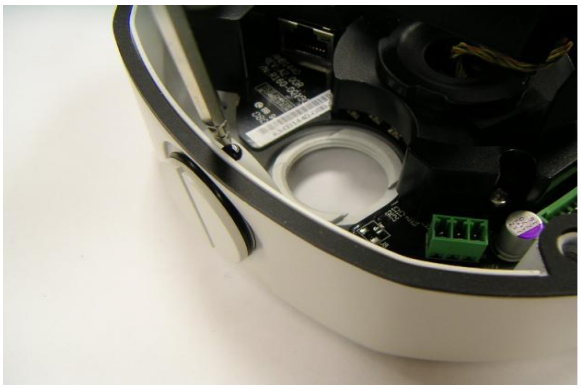
Connecting the IP Outdoor Rugged Dome

1) Remove the cover

Remove the dome cover with special hex wrench in the accessory kit.

2) Insert the cable

There are two conduit holes on this rugged dome. One is at the bottom, while the other is at the side and covered with a plug. Remove the plug if your cable will go through the one at the side of the rugged dome



3) Connect cables to connectors

Please follow the instructions in the Physical Description section for how to connect to each connector.

3. Accessing Camera

If you have DHCP server / router in your network:

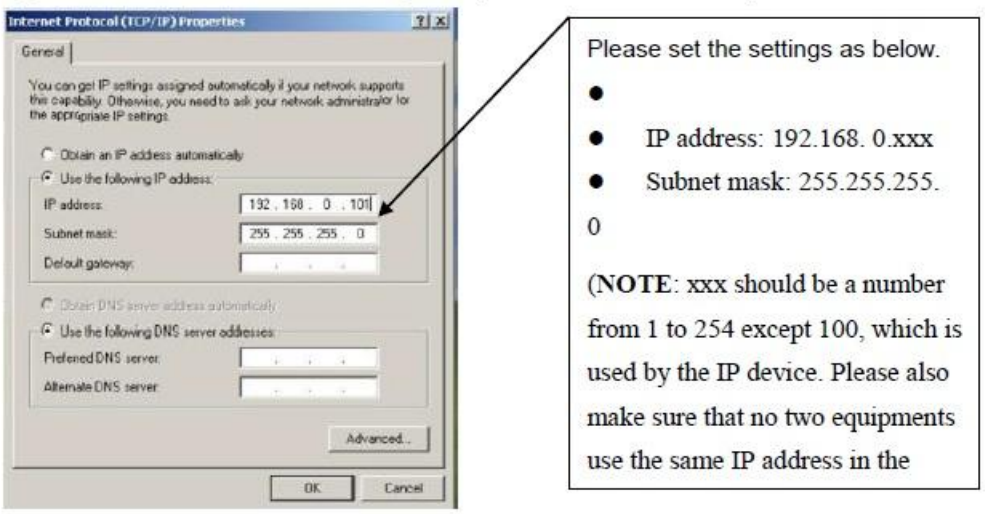
Many network server / routers are able to automatically provide IP addresses through DHCP. If you are using such a network, just plug in your computer and IP Box Cam into the network and your IP device will acquire network address by itself. Find and access the device with our IP Utility program.

If you do ***NOT*** have DHCP server / router in your network:

1. Configure your PC to use the same subnet by changing your PC's IP address to the subnet with prefix 192.168.0.XXX. The last number should be anything from 1 to 254 except 100 and other occupied IP addresses. Subnet mask should be 255.555.255.0.

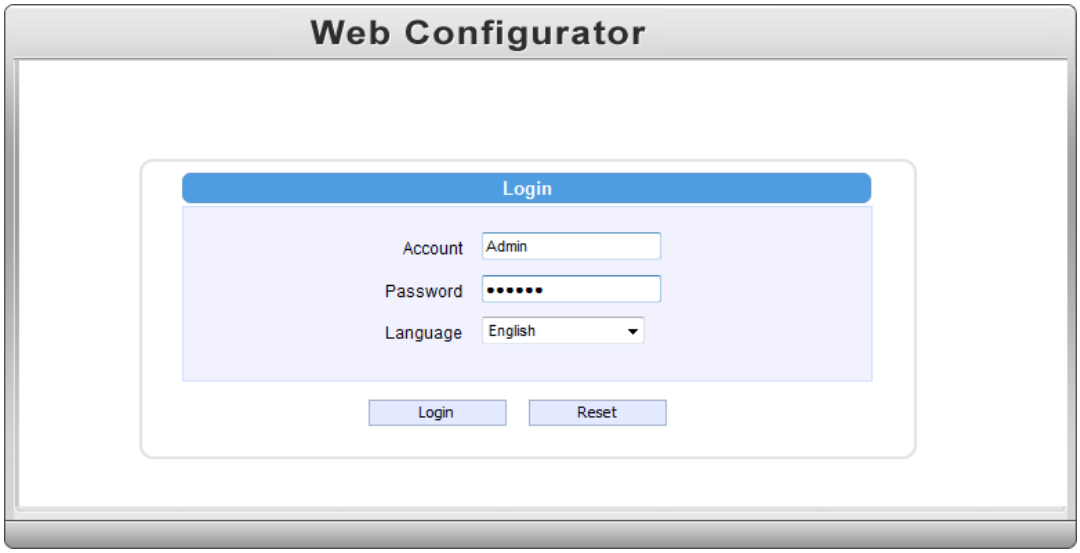
2. **The default IP used by this device is 192.168.0.100. Please make sure your PC is *NOT* using this address and that no two equipments use the same IP address in the network.**

3. Change your IP address by going to Control Panel ->Manage Network Connections -> Right click on the connection to change -> Option -> TCP/IP IPv4 Properties.

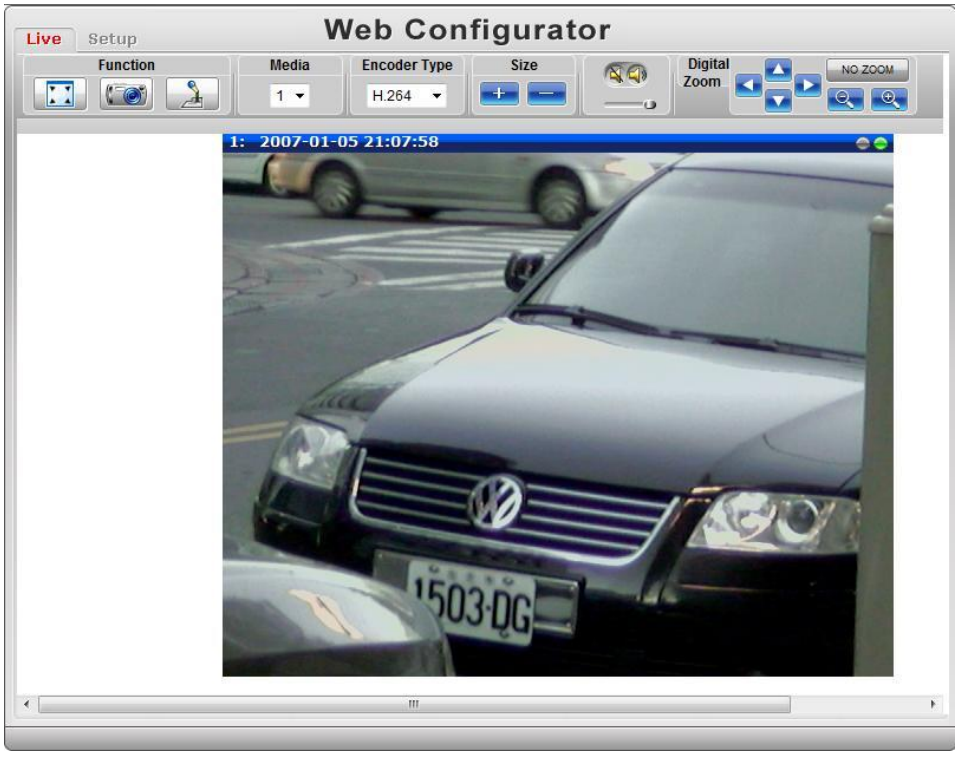

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 101
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel
Please set the settings as below.
IP address: 192.168. 0.xxx
Subnet mask: 255.255.255.
0
(NOTE: xxx should be a number from 1 to 254 except 100, which is used by the IP device. Please also make sure that no two equipments use the same IP address in the

4. Open Internet Explorer (Version 6.0 or above) , and type in the Default IP:
   192.168.0.100

5. When you see the login window, please input default user and password:
   Default User: Admin Password: 123456



6. After logging in, you will see the video from camera. To go to the main menu, click the ”Setup” button on the top left.



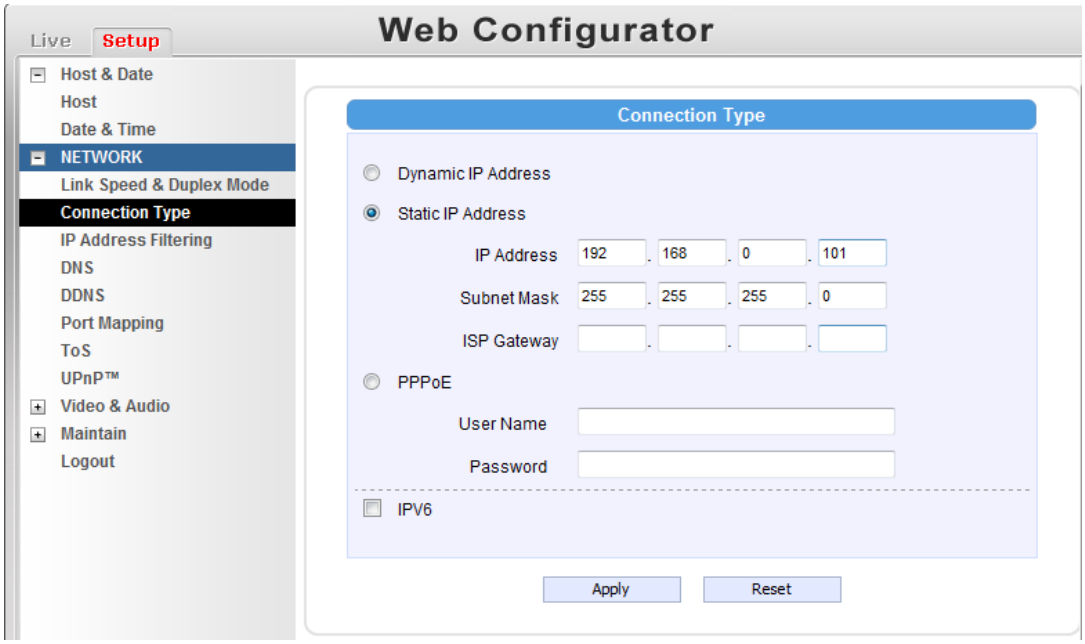
If you are using a single camera, this is enough to access the device.

If you are using multiple devices, you need to change the current device to another unused IP address, so that when the next device is connected to the network, no two devices use the same IP. Please perform the following steps.

7. Go to Network -> Connection Type

8. Change the IP mode to Static.

9. Change the IP to 192.168.0.101 or any other unused IPs. Do NOT use the PC's IP address or 192.168.0.100.). If this is not the first device you add to the network, please also avoid other devices' IPs.



10. Click "Apply"
11. Please go to Maintain -> Save & Reboot, and click "Apply". Internet Explorer will close after a few seconds. This is normal.
12. Wait for 30 seconds, and open IE again to connect to the **new IP**. (In this example, 192.168.0.101). For the second device or more you add into the network, please type the correct IP.

13. Adjust the default Video setting by going to Video & Audio ->Video